

BRASSICA POLLINATION GUIDE

Brassica oleracea



PETAL

ANTHER

STIGMA

***Brassica oleracea* consists of many important vegetable crops, including broccoli, kale, and cabbage. These plants have perfect flowers with both male and female parts, often relying on outcrossing for silique development.**

Step ONE: Remove old/young buds on raceme

Identify a floral raceme with >10 unopened buds along its length. Remove growing point with small buds at the top of the raceme and any buds with visible petals. Viable buds are ~5-10mm long.



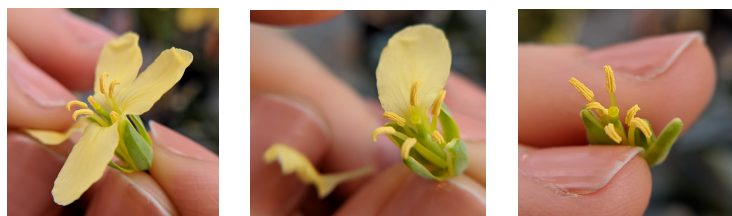
Step TWO: Properly label raceme with cross



Label a small crossing-tag with female x male designators and the date of the cross. Carefully adhere to the single pedicel connecting the flower raceme to the main plant stem. Remove any buds on the pedicel below the tag.

Step THREE: Identify viable pollen source

Select fully opened flowers from a donor plant. Anthers should be actively shedding pollen, which appears bright yellow in color. Avoid dark, translucent pollen.



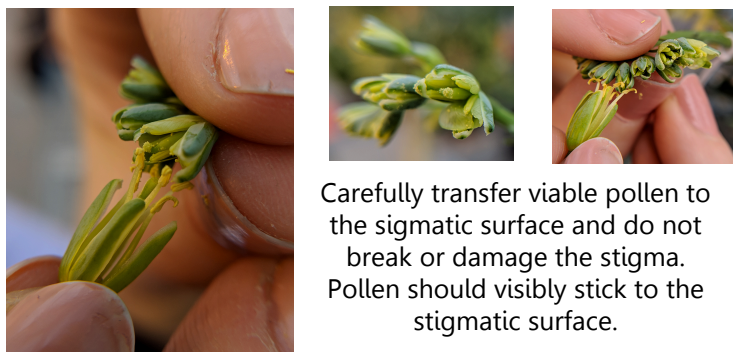
Step FOUR: Expose stigmatic surface



Use a tweezers or sharp wooden tool to tease open the sepals of each flower bud along the length of the

raceme. Open flowers just enough to expose and isolate stigma from anthers. Avoid damage to the stigma. Male anthers should be smooth and void of pollen grains. Proceed to Step FIVE quickly to avoid drying of stigma.

Step FIVE: Transfer donor pollen to stigma



Carefully transfer viable pollen to the stigmatic surface and do not break or damage the stigma. Pollen should visibly stick to the stigmatic surface.

Step SIX: Monitor and harvest mature fruit

Mature fruit will begin to develop and elongate within a week of pollination. Expect to see mature fruit (silique) 3-5 weeks after pollination. Dry siliques will appear yellow-to-tan within ~6-8 weeks after pollination. Siliques will shatter if left to dry too long. Follow good seed stewardship practices, using clean harvesting and storage practices to obtain clean, safe seed.



TIPS FROM THE PROS:

- The self-incompatibility system in *B. oleracea* can breakdown and is low in some crops (like broccoli). It may be necessary to emasculate (remove anthers) completely.
- Many *B. oleracea* plants are biennial and will not flower without proper vernalization (cold period)

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